

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A system for controlling a design process having a first design sub-process and a second design sub-
5 process, outcomes of one of the first and second design sub-processes being linked to outcomes of the other of the first and second design sub-processes and vice versa by a relationship between one or more first design sub-process variables (A) and one or more second design sub-process
10 variables (B) of the second design sub-process, the system comprising:

a user configurable interface between said first and second design sub-processes, said user configurable interface allowing a user of said system to control said
15 design process by specifying which of said one or more variables (A,B) are active variables which can have their domains modified by at least one internal process within the sub-process to which the variable belongs and which of said one or more variables (A,B) are passive variables
20 which have their domains determined within allowable values by the domains of the other variable or variables in said relationship, whereby specifying which of the variables are active variables and which are passive variables determines the manner in which said relationship
25 is evaluated and the dominance of a sub-process in the overall design process.

2. A system as claimed in claim 1, wherein the user configurable interface defines a plurality of
30 possible relationships between the first and second design sub-processes and said user configurable interface has relationship selection means to allow a user to select at least one relationship from the plurality of relationships.

35

3. A system as claimed in claim 1, wherein the relationship selection means allows a user to select a

- 25 -

plurality of relationships.

4. A system as claimed in claim 2, wherein
said user configurable interface is configured to specify
5 which variables are treated as active and which are
treated as passive on the basis of the selected
relationship.

5. A system as claimed in claim 1, wherein
10 said user configurable interface has goal specification
means alternatively or in combination with the above which
allows a user to specify a goal or goals of said design
process and wherein said user configurable interface is
configured to specify said relationship on the basis of
15 the user specified goal or goals.

6. A system as claimed in claim 1, wherein
there is more than one relationship between the first and
second design sub-processes.
20

7. A system as claimed in claim 1, where the
user configurable interface is configured to allow a user
to specify two or more relationships and a conditional
rule for selecting which of the two or more relationships
25 is used.

8. A system as claimed in claim 1, wherein
said relationship comprises either:
one or more rules; or
30 one or more algorithms; or
a combination of one or more rules and one or
more algorithms.

9. A system as claimed in claim 1, wherein
35 there are more than two sub-processes.

10. A system as claimed in claim 9, wherein

- 26 -

there are relationships between either all or some of the sub-processes.

11. A system as claimed in claim 9, wherein
5 there are relationships between more than two sub-processes.

12. A system as claimed in claim 1, wherein the
system allows constraints to be placed on a domain of a
10 variable.

13. A system as claimed in claim 12, wherein
the system allows the constraints to be defined as "hard"
constraints which cannot be breached or "soft" constraints
15 which can be breached if other conditions are satisfied.

14. A system as claimed in claim 1, further
comprising an optimisation engine for optimising the
design process using one or more rules to analyse
20 available solutions of the design process.

15. A system as claimed in claim 14, wherein
the optimisation engine is configured to compare potential
solutions to the design process with pre-existing
25 solutions to enable pre-existing solutions to be brought
to the attention of a user.

16. A system as claimed in claim 1, wherein
said user configurable interface has relationship
30 specification means for specifying the relationship
between the sub-processes.

17. A method for controlling a design process
having a first design sub-process and a second design sub-
35 process, outcomes of one of the first and second design
sub-processes being linked to outcomes of the other of the
first and second design sub-processes and vice versa by a

- 27 -

relationship between one or more first design sub-process variables (A) and one or more second design sub-process variables (B) of the second design sub-process, the system comprising:

- 5 providing a user configurable interface between said first and second design sub-processes and configuring said user configurable interface control said design process by specifying which of said one or more variables (A,B) are active variables which can have their domains
10 modified by at least one internal process within the sub-process to which the variable belongs and which of said one or more variables (A,B) are passive variables which have their domains determined within allowable values by the domains of the other variable or variables in said
15 relationship,
 whereby specifying which of the variables are active variables and which are passive variables determines the manner in which said relationship is evaluated and the dominance of a sub-process in the
20 overall design process.

18. A method as claimed in claim 17, further comprising specifying said relationship.

- 25 19. A method as claimed in claim 18, further comprising specifying said relationship by selecting at least one relationship from a plurality of possible relationships between the first and second design sub-process.
30

20. A method as claimed in claim 19, comprising specifying which variables are treated as active and which are treated as passive on the basis of the selected relationship.
35

21. A method as claimed in claim 18, comprising specifying said relationship on the basis of the user

- 28 -

specified goal or goals.

22. A method as claimed in claim 18, wherein
specifying a relationship comprises specifying two or more
5 relationships and a conditional rule for selecting which
of the two or more relationships is used.

23. A method as claimed in claim 17, further
comprising placing constraints on the domain of at least
10 one variable.

24. A method as claimed in claim 23, further
comprising defining the constraints as a "hard" constraint
which cannot be breached or "soft" constraint which can be
15 breached if other conditions are satisfied.

25. A method as claimed in claim 17, further
comprising optimising the design process using one or more
rules to analyse available solutions of the design
20 process.

26. A method as claimed in claim 25, further
comprising comparing potential solutions to the design
process with pre-existing solutions to enable pre-existing
25 solutions to be brought to the attention of a user.